Work Order ID 56730

March 5, 2010 9:59:52 AM

Item ID: D3391-013 **Accept** **Setup Start**

Revision ID: **Stop**

Item Name: Mid Tube Assembly

Start Date: 05/03/2010 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 17/03/2010 **Req'd Qty:** 1.00 **Customer:**

Reference:

Approvals: **Process Plan:** PL **Date:** 10305 **Tooling:** _____ **Date:** _____ **Run Start**

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
100	Skidtubes	0.00							
Skidtubes		0.00							

Draw Nbr	Revision Nbr
D3391	Rev H

Skidtubes

Memo

1-Cut tube to finish length as per Dwg D3391

2-Identify as D3391-013

3-Drill pilot holes using DT8796 (including "B" holes) and drill only 1 fwd saddle hole on one side only as per Dwg D3391

4-Open saddles and GHW holes to Ø0.375" exept for fwd saddle hole of detail "J"

5-Remove .030" from Fwd indexing Ridge as per Dwg D3391

6-Remove indexing ridge on Fwd & Aft end of skidtube as per Dwg D3391

7-Deburr

8-Drill #30 pilot holes using wearplate Jig DT8217 Identify Ø0.250" holes with paint marker,

9-Open wearplate holes of D3391-013 assembly detail section G-G to Ø0.250" (14 holes) as per Dwg D3391 and 2 holes in section Detail "J", do not open wearplate holes of section "J"

10-Open wearplate holes of D3391-013 assembly detail section H-H to Ø0.297" (20 holes) as per Dwg D3391

BE 10/03/10

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp

11-Open .375" holes to .438" ***do not open fwd saddle holes*** BE 10/03/10

12- Locate electric step holes 41.5000" from fwd end and drill using DT 8393

13- Open elecrtic step holes 0.391"per dwg D3391 (section L-L)

14- Open elecrtic step holes 0.297"per dwg D3391 (section M-M)

15- Open elecrtic step holes 0.250" per dwg D3391 (section LL-LL)

16-Locate D3391-021 in D3391-023 at 9.00" (see view z-z)

17- Transfer drill one fwd saddle hole only to .188" dia, transfer drill all remaining fwd saddle holes using DT 8149 locating from previusly drill .188" dia hole, using t-pins and clicos to ensure perfect allingment, open up previusly tranfer drilled pilot holes in D3391-013/-011 to 0.438" dia. in D3391-011

18- Transfer drill 2 wearplate holes into D3391-011 using DT8217, locating from two previusly drilled holes, drill remaining wearplate holes into D3391-011.

19- Locating from two fwd wearplate holes drill remaining 6 wearplte holes in D3391-011 using DT8937

20- Open 2 fwd wearplate holes in D3391-013 to .250" dia.

21- counterbore two aft wearplate holes in D3391-011 as per dwg

22- Open 12 wearplate holes in D3391-011 to 0.297" dia.

23- Deburr and blow out all chips from inside tube

14/01/5

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

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QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110	QC5- Inspect part completeness to step on W/O	0.00							
QC						S 10/04/06			
Quality Control	**Memo**	0.00				50			
120	Chemical Conversion Coat per QSI005 4.1	0.00							
HandFinish						1	M	10/4/6	
Hand Finishing	**Memo**	0.00							
130	QC3- Inspect Part Finish	0.00							
QC						DP 10-4-6			
Quality Control	**Memo**	0.00							

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

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NOTE: Date & initial all entries

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QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Skidtubes	0.00				1	11 10/4/16		
Skidtubes									
Skidtubes	**Memo**	0.00							
	Bond web in place as per Dwg D3391 & QSI 015. ******Ensure Web Aligment ****** Exp 12/8/13 13# 112429								
150	QC5- Inspect part completeness to step on W/O	0.00 Sidoddor							
QC	**Memo**	0.00							
Quality Control	Inspect each insert using DT8821								
160	Skidtubes	0.00				1	0	BE 10/04/08	
Skidtubes	**Memo**	0.00							
Skidtubes	1-Weld crossbolt spacer as per dwg D3391 & QSI 004□2-grind weld flush A/R M113807						11 10/4/12		

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

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QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170	QC10- Inspect visual per QSI004- ground welds	0.00							
QC	**Memo**	0.00							
Quality Control									
180	QC5- Inspect part completeness to step on W/O	0.00							
QC	**Memo**	0.00							
Quality Control									
190	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
Powdercoat	**Memo**	0.00							
Powder Coating	***Use paint screws to mask inserts.*** START TIME: 3:15 OVEN TEMPERATURE: 320° FINISH TIME: 345								

10.07.13 RE-ALODINED

M 11484

8 10/05/05

8 10/05/05

10 BR 10-7-13.

1 BR 10-7-13.

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	QC3- Inspect Part Finish	0.00							
QC									
Quality Control	**Memo**	0.00							
210		0.00							
Skidtubes	Skidtubes								
Skidtubes	**Memo**	0.00							

1- insert D3391-011 into D3391-13

2- insert T-pins into first and third fwd saddle holes

3- ON FIRST SIDE ONLY drill out 2nd and forth fwd saddles holes to 0.500" as per DSI 9364

4- remove T-pins and locate DT9415 from first and third crossbolt hole using T-pins and clekos

5- ON 2ND SIDE ONLY ream out 2nd and forth saddle hole to 0.499". Remove DT9415

6- deburr, re-alodine and blow out chips

7- press fit D3591-1 spacers using DT9416 starting from 0.500" side

=> M 10/07/12 12 | X1 | 0

=> M 10/07/12 | X1 | 0

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

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QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220 QC Quality Control	QC5- Inspect part completeness to step on W/O	0.00							
	Memo	0.00							
230 HandFinish Hand Finishing	HandFinishing	0.00							
	Memo Install inserts	0.00							
240 QC Quality Control	QC5- Inspect part completeness to step on W/O	0.00							
	Memo Inspect thread of each insert using DT8821	0.00							

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W/O:		WORK ORDER CHANGES					
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Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start**

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250 HandFinish Hand Finishing	HandFinishing	0.00	10/07/14			X1	0		
	Memo Assemble as per dwg D3391	0.00							
260 QC Quality Control	QC5- Inspect part completeness to step on W/O	0.00	Sidoths			X1			
	Memo	0.00							
270 Packaging Packaging	Identify as per dwg & Stock Location:_____	0.00	10/07/15			X1	0		
	Memo W/O. 56716 D412-742-041	0.00							

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

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QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
280	QC21- Final Inspection - Work Order Release	0.00							10A-15
QC	**Memo**	0.00							MP 10-7-15
Quality Control									

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

Picklist Print

March 5, 2010 9:59:50 AM

1/9

Work Order ID: 56730

Parent Item: D3391-013

Parent Item Name: Mid Tube Assembly

Comments: IPP A□05.12.13□New Issue□EC
IPP B□06.02.09□Dwg rev.D EC
IPP Rev:06-03-28 Update Manufacturing Instructions JLM□□
IPP rev D 07.03.14 dwg Rev F EC

Start Date: 05/03/2010 **Required Date:** 17/03/2010
Start Qty: 1.00 **Required Qty:** 1.00

AN960C10L — Purchased — No — Each — 388.0000 — 4.0000

washer * NAS1149C0332R

Warehouse Location	Loc Qty	Loc Code
OFFSHORE		
FG	100	M115000
103585	100	
Main Warehouse		
ST	288	
112116	128	
112612	160	

x4 RL 10/07/14

D3672-1 — Manufactured — No — Each — 1,618.000 — 10.0000

Phenolic Washer

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
ST	1118	
39275	19	
42329	5	
47628	94	
52505	1000	
Main Warehouse		
ST117	500	
51674	500	

x10 RL 10/07/14

Picklist Print

March 5, 2010 9:59:50 AM

2/9

Work Order ID: 56730

Parent Item: D3391-013

Parent Item Name: Mid Tube Assembly

Comments: IPP A□05.12.13□New Issue□EC
IPP B□06.02.09□Dwg rev.D EC
IPP Rev:06-03-28 Update Manufacturing Instructions JLM□□
IPP rev D 07.03.14 dwg Rev F EC

Start Date: 05/03/2010 **Required Date:** 17/03/2010
Start Qty: 1.00 **Required Qty:** 1.00

D2500-1-100	Manufactured	No	100	Each	131.0000	1.0000

Skidtube Extrusion

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
lf	87	
50251	87	
Main Warehouse		
ST	44	
37065	44	

MS27039C4-08	Purchased	No	100	Each	69.0000	4.0000

SCREW

1 BE 10/03/10

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
ST	69	
17831	69	

D3391-011	Manufactured	No	140	Each	0.0000	1.0000

Fwd Tube Assembly

XY MI 10/07/14

B 37539 D MDM/5

Picklist Print

March 5, 2010 9:59:50 AM

3/9

Work Order ID: 56730

Parent Item: D3391-013

Parent Item Name: Mid Tube Assembly

Comments: IPP A□05.12.13□New Issue□EC
IPP B□06.02.09□Dwg rev.D EC
IPP Rev:06-03-28 Update Manufacturing Instructions JLM□□
IPP rev D 07.03.14 dwg Rev F EC

Start Date: 05/03/2010 **Required Date:** 17/03/2010

Start Qty: 1.00 **Required Qty:** 1.00

D3389-1	Manufactured	No		210	Each	3.0000	1.0000

Web

B 56813 D 11 10/4/16

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
LG	2	
56624	2	
Main Warehouse		
ST	1	
48244	1	

ALS4-1032-225	Purchased	No		230	Each	6,116.000	10.0000

Insert

N/A on FWD only

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
ST	6116	
107441	16	
110768	6100	

D 3681-1 Seq 160 B 56802 12Pc BE 10/04/08

10.04.08

Picklist Print

March 5, 2010 9:59:50 AM

4/9

Work Order ID: 56730

Parent Item: D3391-013

Parent Item Name: Mid Tube Assembly

Comments: IPP A□05.12.13□New Issue□EC
IPP B□06.02.09□Dwg rev.D EC
IPP Rev:06-03-28 Update Manufacturing Instructions JLM□□
IPP rev D 07.03.14 dwg Rev F EC

Start Date: 05/03/2010
Start Qty: 1.00

Required Date: 17/03/2010
Required Qty: 1.00

ALS4-428-165 — Purchased — No — 230 Each — 30.0000 — 4.0000
Inserts

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
FP	30	
6989	30	

D3591-1 — Manufactured — No — 230 Each — 37.0000 — 2.0000
Bushing *

X4 M 10/07/14

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
ST	37	B57350
46105	29	
47121	8	

ALS4-1032-130 — Purchased — No — 250 Each — 1,142.000 — 26.0000
Insert

X2 M 10/07/14

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
ST	1142	A1114723
110511	1142	

X26 M 10/07/14

5/9

Work Order ID: 56730

Parent Item: D3391-013

Parent Item Name: Mid Tube Assembly

Comments: IPP A□05.12.13□New Issue□EC
IPP B□06.02.09□Dwg rev.D EC
IPP Rev:06-03-28 Update Manufacturing Instructions JLM□□
IPP rev D 07.03.14 dwg Rev F EC

Start Date: 05/03/2010 **Required Date:** 17/03/2010

Start Qty: 1.00 **Required Qty:** 1.00

AN3C4A

Purchased No 250 Each 1,649.000 10.0000

BOLT

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
ST	1649	MM1K1859
112314	13	
112720	12	
112724	3	
112829	1	
112991	2	
113121	64	
113226	344	
113644	110	
113749	100	
114103	500	
114108	500	

X10 MM 10/07/12

6/9

Work Order ID: 56730

Parent Item: D3391-013

Parent Item Name: Mid Tube Assembly

Comments: IPP A□05.12.13□New Issue□EC
IPP B□06.02.09□Dwg rev.D EC
IPP Rev:06-03-28 Update Manufacturing Instructions JLM□□
IPP rev D 07.03.14 dwg Rev F EC

Start Date: 05/03/2010 **Required Date:** 17/03/2010
Start Qty: 1.00 **Required Qty:** 1.00

AN960C10L — Purchased — No — 250 — Each — 388.0000 — 10.0000

washer *NAS1149C0332R

Warehouse Location	Loc Qty	Loc Code
OFFSHORE		
FG	100	M115000
103585	100	
Main Warehouse		
ST	288	
112116	128	
112612	160	

X10 Hl 10/07/14

AN960C416L — Purchased — No — 250 — Each — 1,314.000 — 4.0000

WASHER

Warehouse Location	Loc Qty	Loc Code
OFFSHORE		
FG	44	
104925	44	
Main Warehouse		
ST	1270	
111916	2	
112612	368	
112794	500	
112828	400	

X4 Hl 10/07/14

Picklist Print

March 5, 2010 9:59:50 AM

7/9

Work Order ID: 56730

Parent Item: D3391-013

Parent Item Name: Mid Tube Assembly

Comments: IPP A□05.12.13□New Issue□EC
IPP B□06.02.09□Dwg rev.D EC
IPP Rev:06-03-28 Update Manufacturing Instructions JLM□□
IPP rev D 07.03.14 dwg Rev F EC

Start Date: 05/03/2010 **Required Date:** 17/03/2010
Start Qty: 1.00 **Required Qty:** 1.00

D3401-041 Manufactured No 250 Each 25.0000 1.0000

Tow Cap Assembly

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
ST	25	
36216	1	
41931	1	
46029	13	
50316	10	

D3564-13 Manufactured No 250 Each 36.0000 1.0000

Wearshoe

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
FP17	24	B57922
51611	3	
56285	21	
Main Warehouse		
ST	12	
45409	2	
46495	10	

Picklist Print

March 5, 2010 9:59:50 AM

8/9

Work Order ID: 56730

Parent Item: D3391-013

Parent Item Name: Mid Tube Assembly

Comments: IPP A□05.12.13□New Issue□EC
IPP B□06.02.09□Dwg rev.D EC
IPP Rev:06-03-28 Update Manufacturing Instructions JLM□□
IPP rev D 07.03.14 dwg Rev F EC

Start Date: 05/03/2010 **Required Date:** 17/03/2010
Start Qty: 1.00 **Required Qty:** 1.00

D3566-13 Manufactured No 250 Each 75.0000 1.0000

Gasket

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
FP	73	
53461	73	
Main Warehouse		
ST	2	
45717	1	
50265	1	

x1 AT 10/07/14

D3672-1 Manufactured No 250 Each 1,618.000 4.0000

Phenolic Washer

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
ST	1118	
39275	19	
42329	5	
47628	94	
52505	1000	
Main Warehouse		
ST117	500	
51674	500	

x4 AT 10/07/14

Picklist Print

March 5, 2010 9:59:50 AM

9/9

Work Order ID: 56730

Parent Item: D3391-013

Parent Item Name: Mid Tube Assembly

Comments: IPP A□05.12.13□New Issue□EC
IPP B□06.02.09□Dwg rev.D EC
IPP Rev:06-03-28 Update Manufacturing Instructions JLM□□
IPP rev D 07.03.14 dwg Rev F EC

Start Date: 05/03/2010
Start Qty: 1.00

Required Date: 17/03/2010
Required Qty: 1.00

D3672-3 — Manufactured — No — 250 — Each — 524.0000 — 4.0000

Phenolic Washer

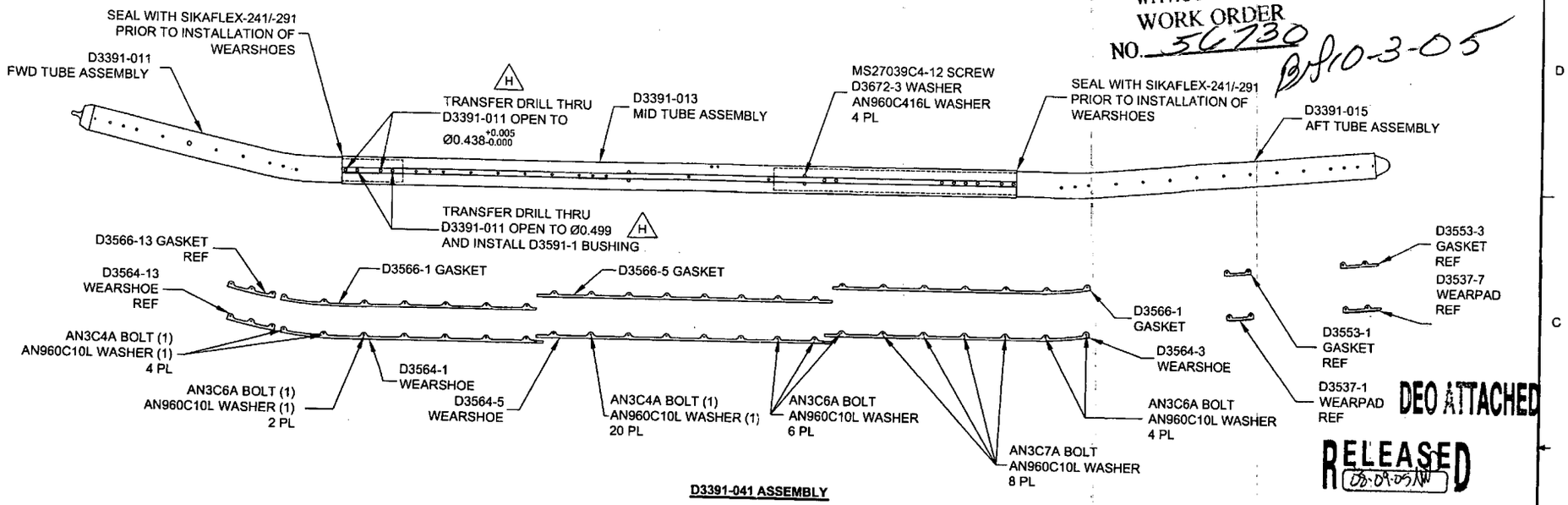
Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
ST117	24	B57704
51596	24	
Main Warehouse		
ST77	500	
55560	500	

MS27039C1-09 — Purchased — No — 250 — Each — 30.0000 — 4.0000

SCREW

Warehouse Location	Loc Qty	Loc Code
Main Warehouse		
ST	30	
7831	30	

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 56730 BJS 10-3-05



DEO ATTACHED

RELEASED 08-09-05 JW

D3391-041 ASSEMBLY

D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY -041	PART NUMBER	DESCRIPTION
X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3591-1	BUSHING
4	D3672-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

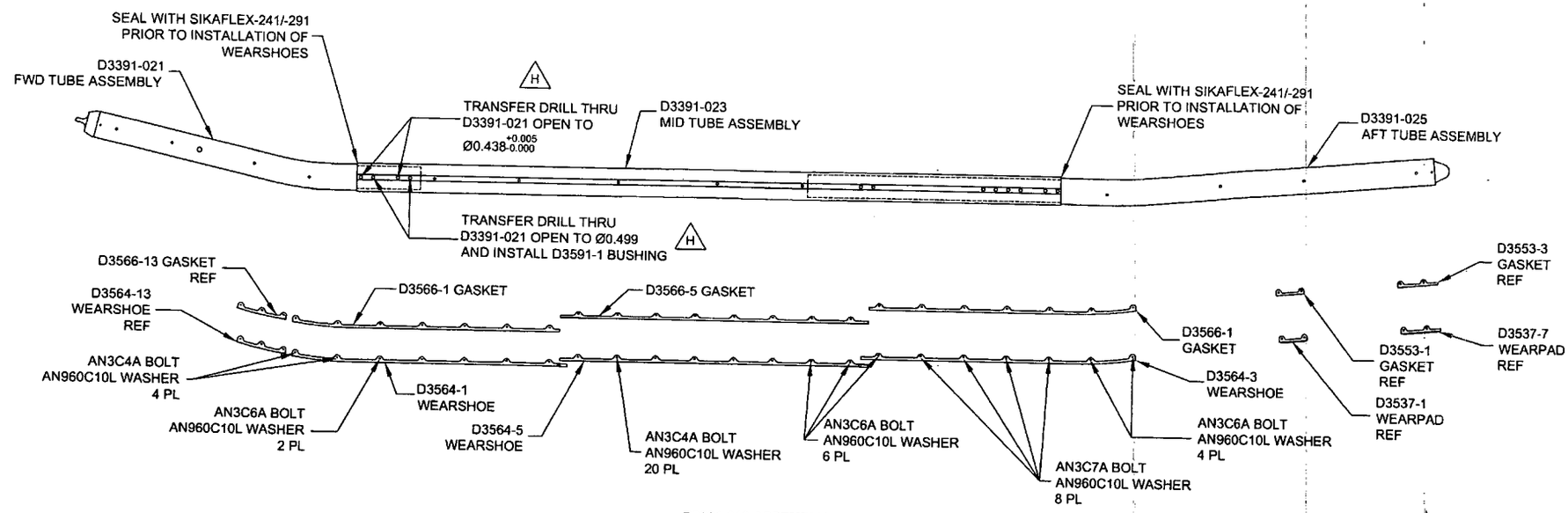
H

GENERAL NOTES

1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

REV.	DESCRIPTION	BY	DATE
H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07

DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	AJS	PORT HADLOCK, WA
CHECKED		DRAWING NO. D3391 REV. H
MFG. APPR.		SHEET 1 OF 8
APPROVED		TITLE 412 FLOAT SKIDTUBE
DE APPR.		SCALE NTS
DATE	08.08.20	



D3391-043 ASSEMBLY

D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

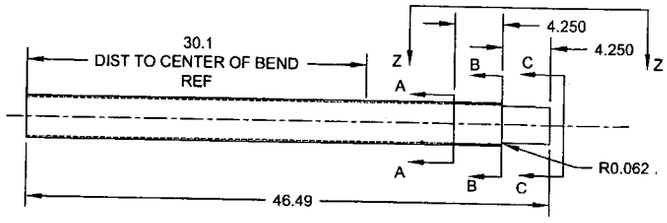
QTY -043	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3591-1	BUSHING
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

GENERAL NOTES

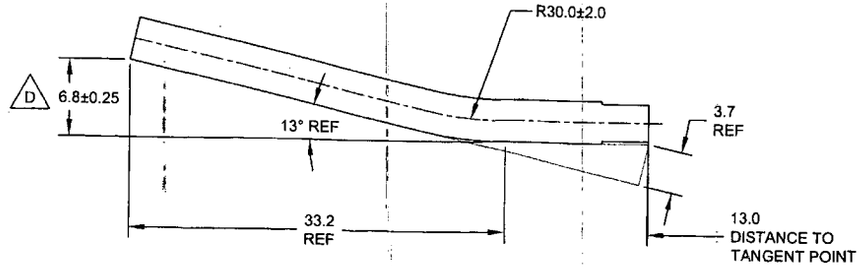
1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
   POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

w/o 56730
DEO ATTACHED
RELEASED
08.09.20 MP

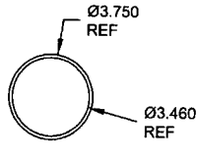
DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	AJS	PORT HADLOCK, WA
CHECKED		DRAWING NO. D3391 REV. H
MFG. APPR.		SHEET 2 OF 8
APPROVED		TITLE 412 FLOAT SKIDTUBE SCALE NTS
DE APPR.		
DATE 08.08.20		



D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



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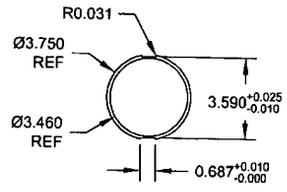
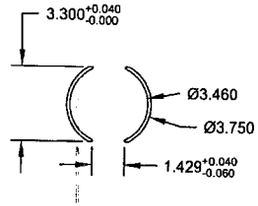
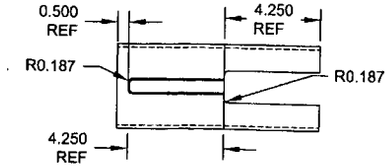


SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X



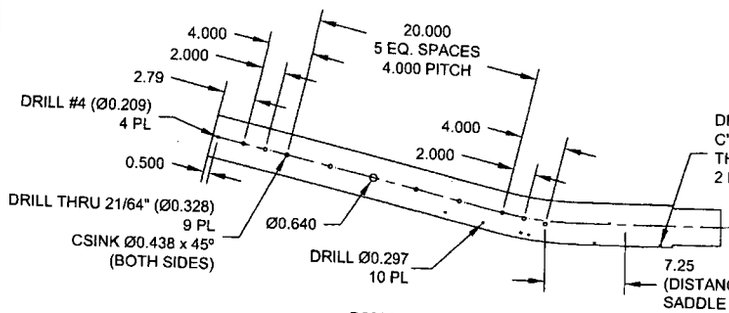
VIEW Z-Z
SCALE 2X

W/O 56730

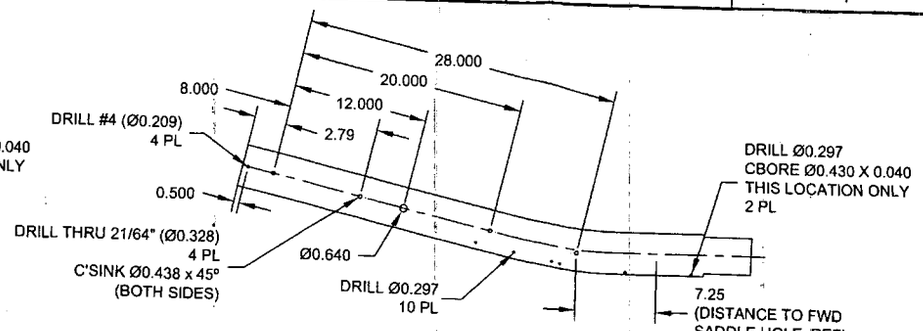
DEO ATTACHED

RELEASED
08.19.05 NW

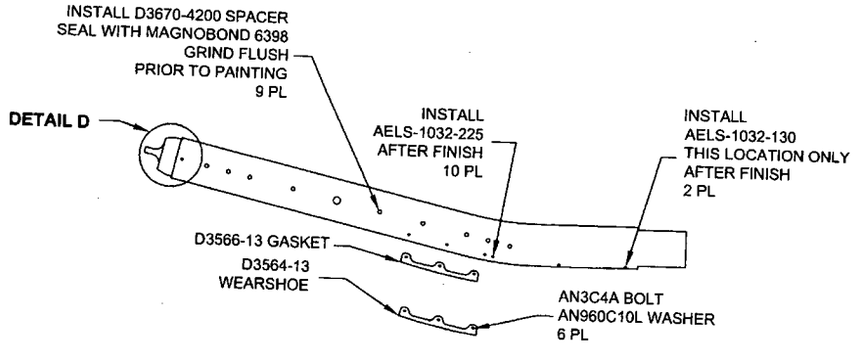
DESIGN	PH	DART AEROSPACE USA, INC PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. D3391 — REV. H — SHEET 3 OF 8
MFG. APPR.		TITLE: 412 FLOAT SKIDTUBE — SCALE: NTS
APPROVED		
DE APPR.		
DATE	08.08.20	



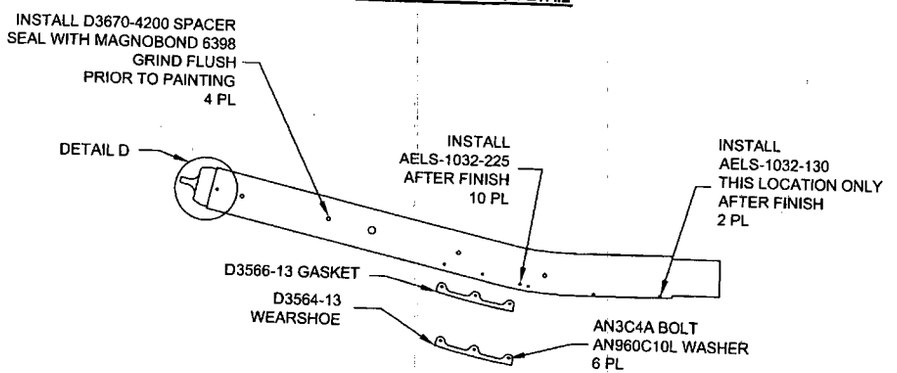
D3391-011 DRILLING DETAIL



D3391-021 DRILLING DETAIL



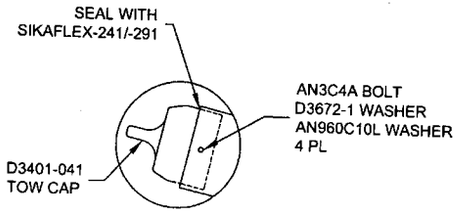
D3391-011 ASSEMBLY DETAIL



D3391-021 ASSEMBLY DETAIL

D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X		D3391-011	FWD TUBE ASSEMBLY
	X	D3391-021	FWD TUBE ASSEMBLY
1	1	D6013-047	FWD TUBE
1	1	D3401-041	TOW CAP
1	1	D3564-13	WEARSHOE
1	1	D3566-13	GASKET
9	4	D3670-4200	SPACER
4	4	D3672-1	WASHER
10	10	AN3C4A	BOLT
10	10	AN960C10L	WASHER
2	2	AELS-1032-130	INSERT
10	10	AELS-1032-225	INSERT



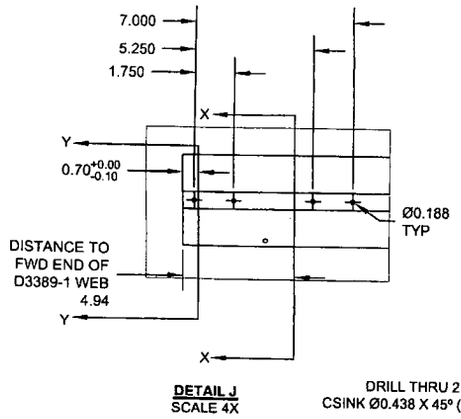
DETAIL D
SCALE 2X

DEO ATTACHED

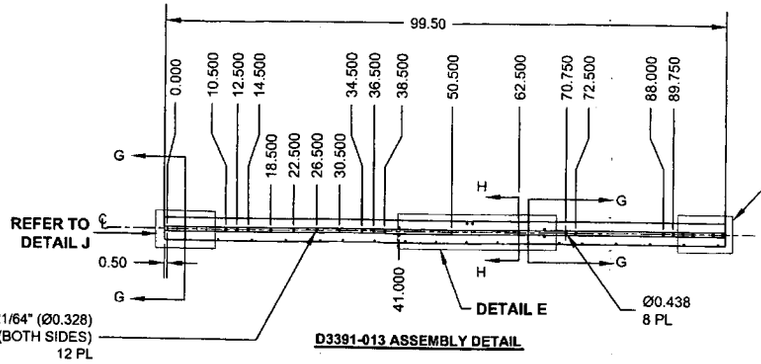
RELEASED 08-09-05 MW

W/O 34730

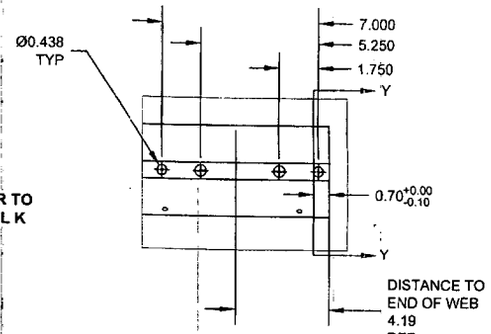
DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. D3391 REV. H
MFG. APPR.		SHEET 4 OF 8
APPROVED		TITLE 412 FLOAT SKIDTUBE SCALE NTS
DE APPR.		
DATE	08.08.20	



DETAIL J
SCALE 4X

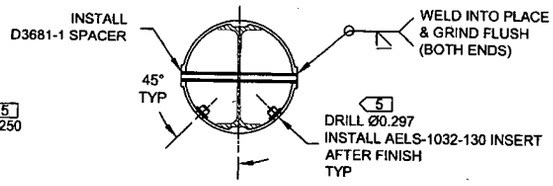


D3391-013 ASSEMBLY DETAIL



DETAIL K
SCALE 4X

SECTION G-G
SCALE 5X



SECTION H-H 12 PL
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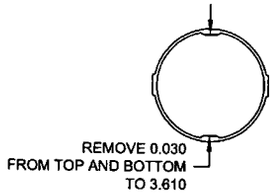
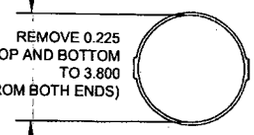


SECTION X-X
SCALE 5X

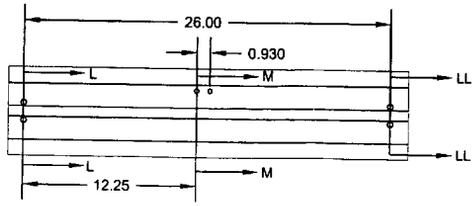
w/o 5e730



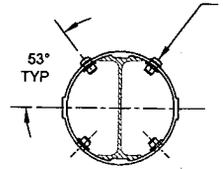
SECTION Y-Y
SCALE 5X

D3391-013 MID TUBE ASSEMBLY PARTS LIST

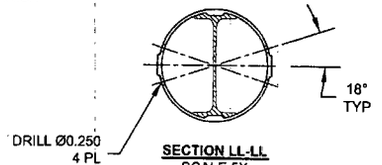
QTY -013	PART NUMBER	DESCRIPTION
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428-165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW



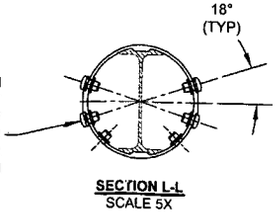
DETAIL E
SCALE NONE



SECTION M-M
SCALE 5X



SECTION LL-LL
SCALE 5X



SECTION L-L
SCALE 5X

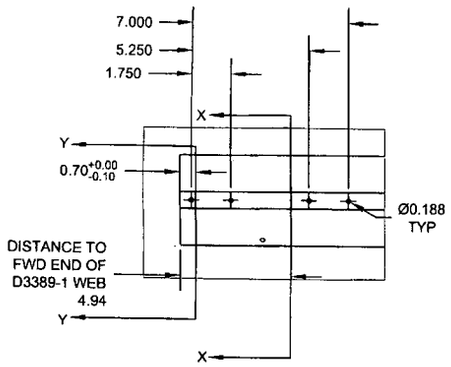
DEO ATTACHED

RELEASED
08.24.20 MD

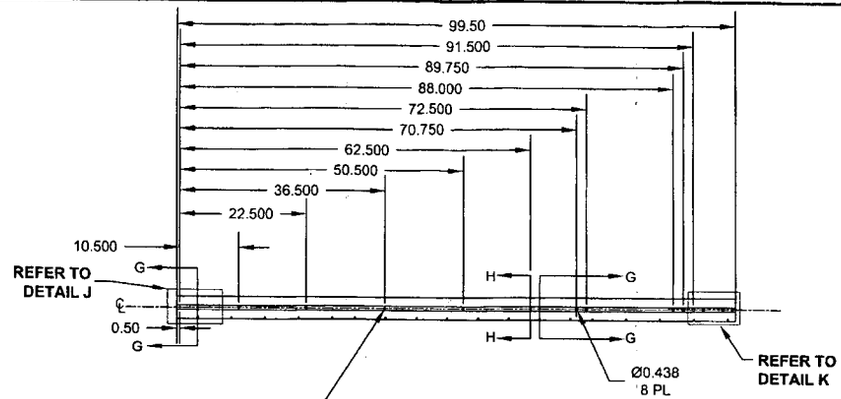
D3391-013 MID TUBE ASSEMBLY

1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
3) WELDING: PER DART QSI 004

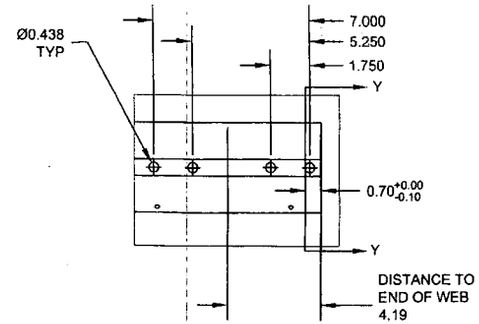
DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. D3391 REV. H
MFG. APPR.		SHEET 5 OF 8
APPROVED		TITLE 412 FLOAT SKIDTUBE SCALE NTS
DE APPR.		
DATE	08.08.20	



DETAIL J
SCALE 4X

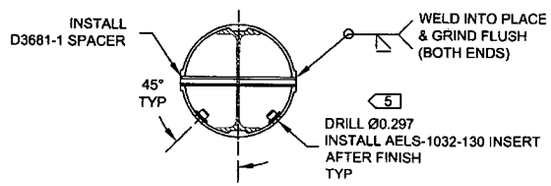


D3391-023 ASSEMBLY DETAIL

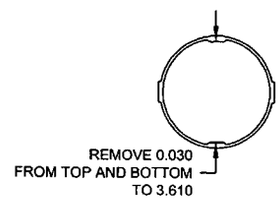


DETAIL K
SCALE 4X

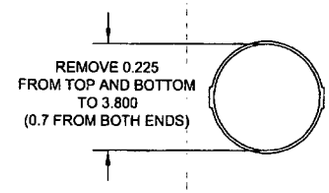
SECTION G-G
SCALE 5X



SECTION H-H
SCALE 5X
5 PL



SECTION X-X
SCALE 5X



SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

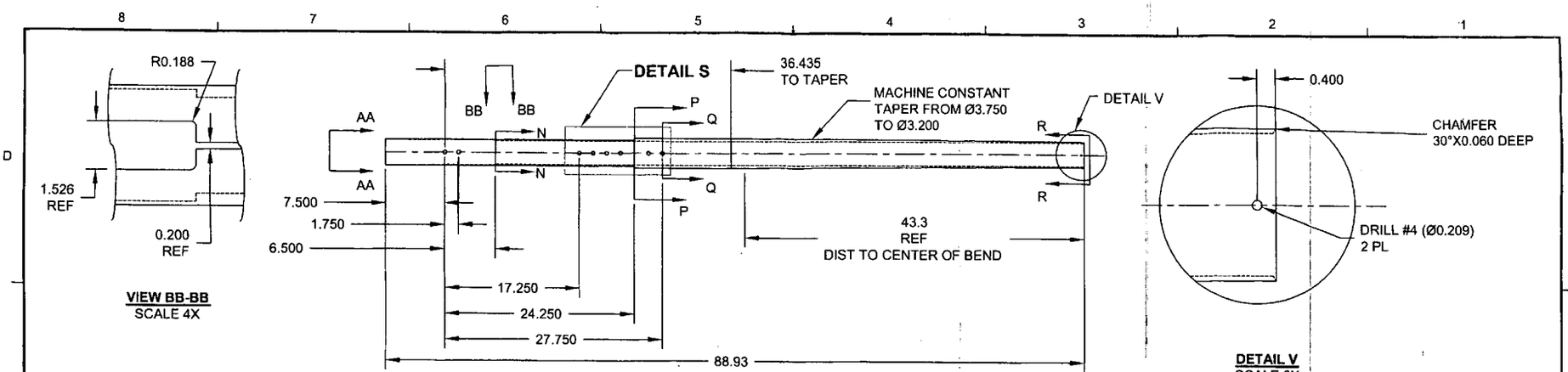
1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
3) WELDING: PER DART QSI 004

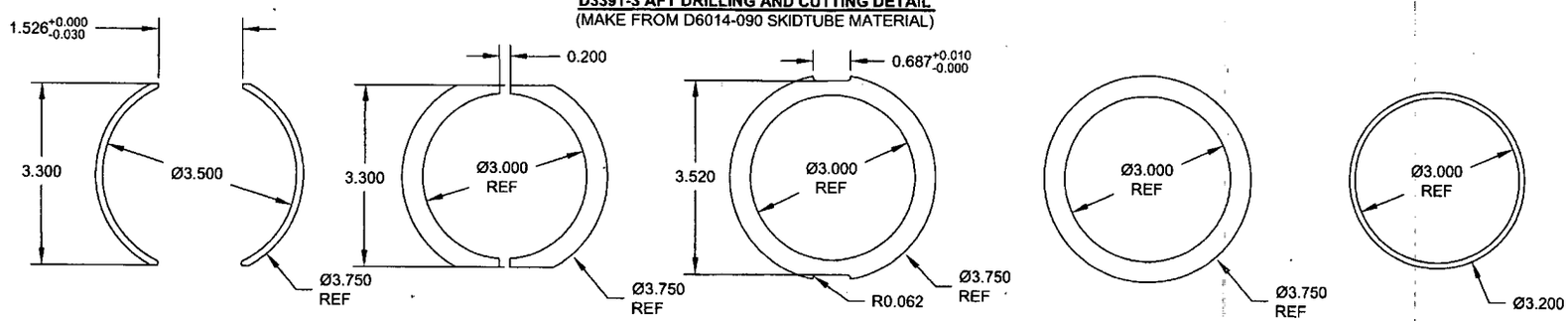
DEO ATTACHED

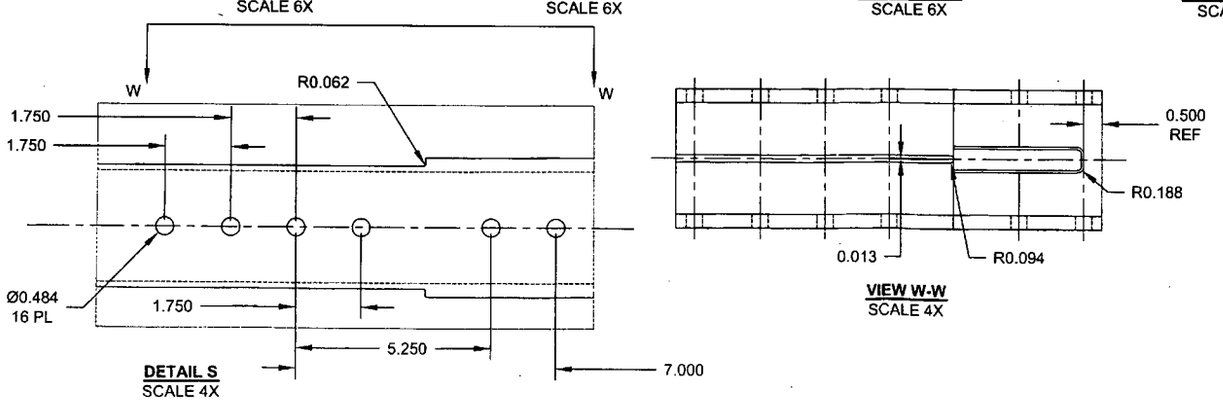
RELEASED 08-09-05 JW

W/O 56730

DESIGN	PH	DART AEROSPACE USA, INC PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. REV. H
MFG. APPR.		D3391 SHEET 6 OF 8
APPROVED		TITLE SCALE
DE APPR.		412 FLOAT SKIDTUBE NTS
DATE	08.08.20	





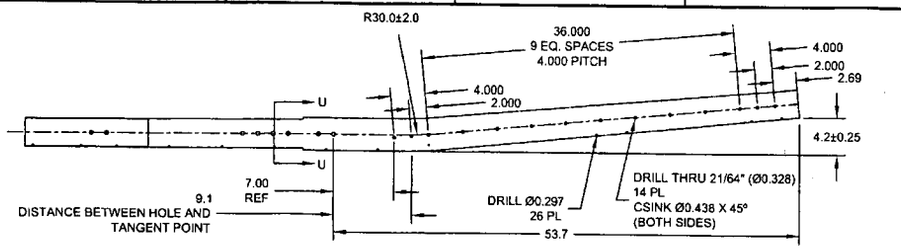


DEO ATTACHED

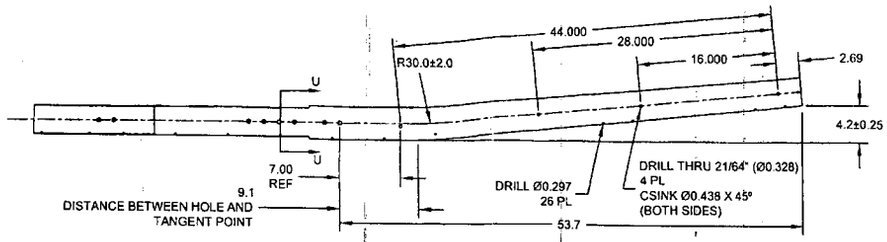
RELEASED 08.09.20

W/O 56730

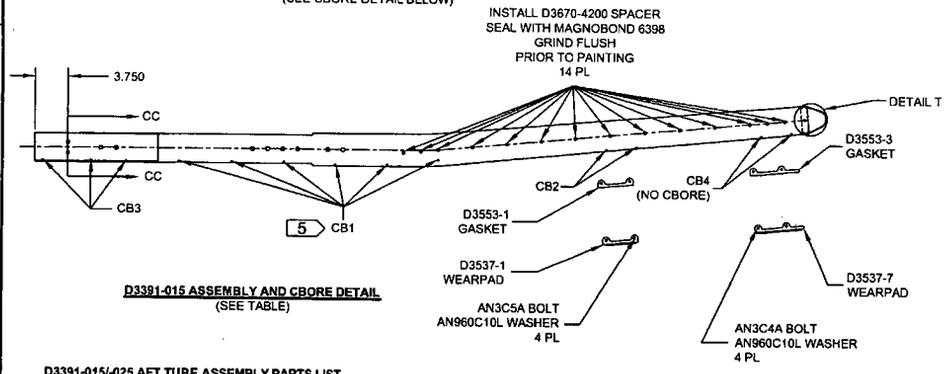
DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	AJS	PORT HADLOCK, WA
CHECKED		DRAWING NO. D3391 REV. H
MFG. APPR.		SHEET 7 OF 8
APPROVED		TITLE 412 FLOAT SKIDTUBE SCALE NTS
DE APPR.		
DATE 08.08.20		



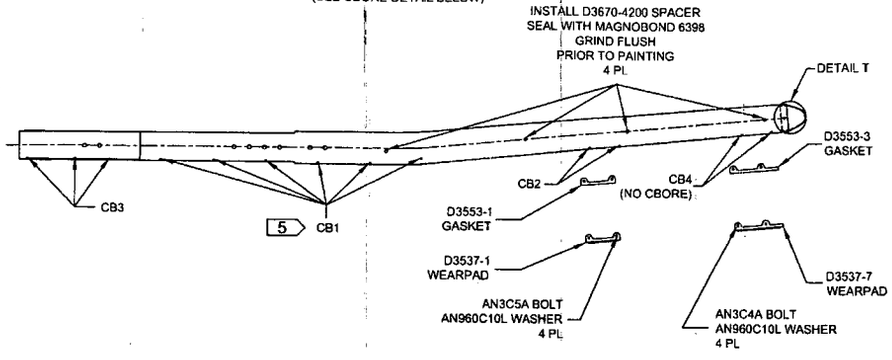
D3391-015 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)



D3391-025 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)



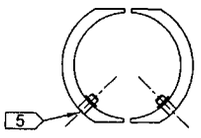
D3391-015 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)



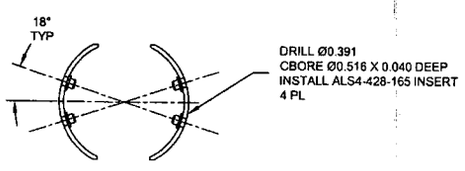
D3391-025 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)

D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST

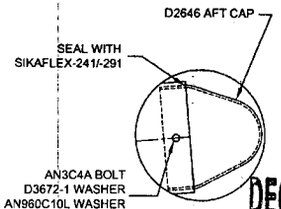
QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X		D3391-015	AFT TUBE ASSEMBLY
	X	D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
14	14	AELS-1032-130	INSERT
12	12	AELS-1032-225	INSERT
4		ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER



SECTION U-U
SCALE 3X



SECTION CC-CC
SCALE 3X



DETAIL T
SCALE 4X

C'BORE HOLES MARKED CB1-CB4 AS FOLLOWS AND
INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

HOLES MARKED	QTY D3391-015	QTY D3391-025	CBORE	P/N
CB1	12	12	Ø0.430 X 0.170	AELS-1032-225
CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130

DEO ATTACHED

RELEASED
08.09.05 MJ

W1056730

DESIGN	PH	DART AEROSPACE USA, INC PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. D3391 — REV. H — SHEET 8 OF 8
MFG. APPR.		
APPROVED		TITLE: 412 FLOAT SKIDTUBE — SCALE: NTS
DE APPR.		
DATE	08.08.20	

DRAWING NO.	TITLE	REV. H	DART AEROSPACE USA, INC	D.E.O. NO.	SHEET NO.	SCALE
D3391	412 FLOAT SKIDTUBE		ENGINEERING ORDER	D3391-H-1	SHEET 1 OF 1	NTS

DRAWN	CHECKED	MFG. APPR.	APPROVED	DE APPR.
DATE 09.09.23	DATE 09.09.24	DATE 09/09/25	DATE 09/09/30	DATE 09/09/30

PURPOSE:
LPS-3 IS NO LONGER USED DURING ASSEMBLY OF D3391-041/-043 SKIDTUBES.

CHANGE:
AMEND NOTE 2 OF D3391-041/-043 SKIDTUBE ASSEMBLIES (ZN A6-1, A6-2) AS FOLLOWS:

2) ~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS.~~ COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

RELEASED
2010 -02- 02
MP

w/056130

DART AEROSPACE LTD	Work Order:	56730
Description: Float Skidtube (412)	Part Number:	D3391-3
Inspection Dwg: D3391 Rev: H		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

[X] First Article [ ] Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Lathe Section						
14.000	+/-0.010					
3.500	+/-0.010					
88.93	+/-0.030					
44.995	+/-0.030					
Ø3.200	+/-0.010					
88.93	+/-0.030					
Ø3.750	+/-0.010					
30° x 160" chamfer	+/-0.010					

Measured by: Date:

Audited by: Date:

HAAS Section						
1.526	+0.000/-0.030					
7.500	+/-0.010					
27.750	+/-0.010					
31.750	+/-0.010					
35.250	+/-0.010					
3.300	+/-0.010					
0.200	+/-0.010					
3.520	+/-0.010					
0.687	+0.010/-0.000					
R0.062	+/-0.010					
Ø0.484	+0.005/-0.001					

Measured by: Date:

Audited by: Date:

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue P/O D3391-015/-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	
C	07.04.20	Ø0.208 dimension removed	KJ/JLM	
D	07.09.06	0.400 dimension removed	KJ/JLM	
E	07.11.23	Dwg Rev. updated	KJ/EC/DD	
F	09.04.27	Dimensions updated per Rev H and NCR09-028	KJ/JLM	
G	09.11.16	Dimension 0.200 removed	KJ	

NO. 22

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: barclay Elliott
Job number: BS6739
Part number: D3391.013
Description: mid tube
Welding Process: Tig[✓] Mig[ ]
Base materiel: Aluminium
Current: AC[✓] DC[ ]

TEST REQUIREMENTS AND RESULTS

Visual:	pass[✓] fail[ ]
Penetration:	pass[✓] fail[ ]

UNACCEPTABLE

Cracks:	pass[✓] fail[ ]
Undercut:	pass[✓] fail[ ]
Pin holes:	pass[ ] fail[ ]
Overlap (cold lap)	pass[✓] fail[ ]
Porosity (surface):	pass[✓] fail[ ]
Coloration:	pass[ ] fail[ ]

Qualifier [signature] **Date of Test Coupon** 10.04.13

Welder Barclay Elliott **Date of Test Coupon** 10.04.13

The above named individual is qualified in accordance with AWS D17.1.2001 to weld